METHOD FOR TRANSMITTING MESSAGES IN A TELECOMMUNICATIONS NETWORK

BACKGROUND INFORMATION

[0001] The present invention relates to a method for transmitting messages in a telecommunications network, in which a first message service and a second message service are available.

[0002] Although it may be used in principle for any multimedia message service and telecommunications network, the present invention and the problem on which it is based are explained with regard to the MMS service (MMS=Multimedia Messaging Service), which is presently specified within the framework of the standardization of 3GPP (3rd Generation Project Program) and can be used, in particular, in the GSM system (GSM=Global System for Mobile Communications) and the UMTS system (UMTS=Universal Mobile Telecommunication System).

[0003] Short message services, which are used to send a short message to a subscriber of the telecommunications network without first having to establish a telecommunications connection to this subscriber, are already generally known in telecommunications networks.

[0004] This is especially important in mobile radio communication systems such as GSM, since their subscribers can often not be reached. In this context, incoming short messages for the subscriber are stored by a telecommunications carrier of the telecommunications network, when the subscriber cannot be reached. At a later time when the subscriber can be reached again, the short message is then automatically transmitted to this subscriber.

[0005] The SMS service (SMS=Short Message Service) is known as a short message service following the GSM standard. In this context, up to 160 7-bit ASCII message characters (ASCII=American Standard Code for Information Interchange) may be transmitted in a short message. The transmission of longer texts is possible with the aid of concatenated short messages. Since only text transmission according to the GSM standard is provided, binary data, such as audio data, image data, or the like, must be converted to text format when they are transmitted, and reconverted to binary format after being received.

[0006] In so doing, is only possible to access the entire content of a short message. In this manner, data of the short message, which may not be desired by the addressed subscriber, may be transmitted to him or her. He or she only receives an overview of the content of the short message after having received the complete short message from the telecommunications carrier.

[0007] FIG. **4** shows the principal structure of a first type A of an SMS short message in GSM.

[0008] In general, an SMS short message SM of the first type A includes a header SM-H and a data portion SM-D. Header SM-H includes signaling inputs and the receiver address in the case of a message to be sent, and the sender address in the case of a message to be received. Data portion SM-D includes the actual message to be transmitted.

[0009] Transmitters and receivers are identified by the MSISDN (Mobile Subscriber Integrated Services Digital Network) number in accordance with GSM 03.40 V7.1.0 (11/1998) Technical Realization of the Short Message Service (SMS); Point-to-Point (PP) and 3G 23.040 V3.2.0 (10/1999) Technical Realization of the Short Message Service (SMS); and Point-to-Point (PP).

[0010] A second header, the so-called user data header SM-DH, may optionally be present in data portion SM-D. If this is the case, then it is indicated by a corresponding signaling input in header SM-H. Various types of SMS user data headers are already specified in GSM 03.40/3G 23.040. Different types of user data headers SM-DH are distinguished by an identification element in user data header SM-DH.

[0011] The concatenation of short messages SM is controlled, for example, by such a user data header SM-DH (identifier: "08" hexadecimal). A further example of such a user data header SM-DH is the "Wireless Control Message Protocol", which is indicated by the identifier "09" in hexadecimal notation. This is needed for the Wireless Application Protocol (WAP).

[0012] FIG. **5** shows the principal structure of a second type B of an SMS short message in GSM.

[0013] In this case, an SMS short message SM' generally includes a header SM-H' and a data portion SM-D', as well. Header SM-H' again includes signaling inputs and the receiver address in the case of a message to be sent, and the sender address in the case of a message to be received. Data portion SM-D' includes the actual message to be transmitted.

[0014] A field, which is 8 bits wide and referred to as the TP-PID (Transfer Protocol—Protocol Identifier), already exists in header SM-H'. Parameter TP-PID is generally used to establish the applied protocol. In particular, it is used to realize telematic interworking or determine how messages are handled in the cellular phone or SMSC (short message service center).

[0015] In telematic interworking, the TP-PID is a bit pattern of the form <001xxxxx>, that is, bit **7**=0, bit **6**=0, and bit **5**=1.

[0016] If this bit pattern appears in the TP-PID of header SM-H' of an SMS short message SM' sent by a cellular phone, then the SMSC (Short Message Service Center) is induced to convert the present SMS to a different data format and/or to carry out a certain communications protocol. In this manner, e.g. a fax of the group **3** can be sent by a cellular phone to a fax machine in the fixed network. In this case, the value of the entire TP-PID octet is <00100010>.

[0017] If this bit pattern appears in the TP-PID of header SM-H' of an SMS short message SM' received by a cellular phone, then the SMSC has received a message from a non-SMS telematic service and converted it to an SMS. In this manner, e.g. an Internet e-mail may be sent from any e-mail account in the fixed network, via the service center, to a cellular phone. In this case, the value of the received TP-PID octet is <00110010>.

[0018] In the case of handling messages, the TP-PID is a bit pattern of the form <01xxxxxx>, that is, bit **7**=0, and bit **6**=1.

[0019] If this bit pattern appears in the TP-PID of the header SM-H' of an SMS short message SM' received by a cellular phone, then the SMSC causes the cellular phone to handle the message in a certain manner. In this manner, e.g. a cellular phone can be induced by the SMSC to relay the received message to the SIM (subscriber identity module), where it is then processed further in accordance with the SIM application toolkits. In this case, the value of the received TP-PID octet is <01111111>.

[0020] If this bit pattern appears in the TP-PID of the header SM-H' of an SMS short message SM' sent by a cellular phone, then, e.g. in the case of the bit pattern <01000001>, the SMSC is caused to overwrite an already present short message of the same cellular phone with the received short message.